

Table K-1. Montane Riparian Communities: Potential CALFED Effects and Conservation Measures

Summary Effect of Implementing CALFED Actions and Conservation Measures on Montane Riparian Communities: Potential for increase in and greater connectivity among montane riparian habitat areas along tributaries to the Sacramento and San Joaquin Rivers and North Bay tributaries. Potential for short-term loss or degradation of existing habitat area and potential for long-term increase in habitat area with implementation of conservation measures to compensate for CALFED impacts and potential for permanent fragmentation of montane riparian corridors if new surface storage facilities are constructed in existing habitat areas.

Associated Evaluated Species: California wolverine, least Bell's vireo, bald eagle, California red-legged frog, valley elderberry longhorn beetle, valley elderberry longhorn beetle critical habitat, ringtail, little willow flycatcher, greater western mastiff-bat, California yellow warbler, yellow-breasted chat, long-eared owl, Cooper's hawk, osprey, double-crested cormorant (rookery), foothill yellow-legged frog, black-crowned night heron (rookery), great blue heron (rookery), great egret (rookery), snowy egret (rookery), double-crested cormorant, silky cryptantha, saw-toothed lewisia.

Summary Programmatic Action Outcomes	Applicable Programmatic Actions	Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program	Overall Effect of Summary Programmatic Action Outcomes with Conservation Measures
Delta Region					
CALFED actions proposed for the Delta Region would not affect montane riparian communities.					
Bay Region					
Associated Evaluated Species: bald eagle, California red-legged frog, valley elderberry longhorn beetle, ringtail, little willow flycatcher, greater western mastiff-bat, California yellow warbler, yellow-breasted chat, long-eared owl, Cooper's hawk, osprey, double-crested cormorant (rookery), foothill yellow-legged frog, great blue heron (rookery), great egret (rookery), and snowy egret (rookery) .					
Summary Programmatic Action Outcomes E1, E5b, E7, E10b, E12, E13b, E14, E15b, E16b, E21, E22, E24, E25, E28, E30, L3, Q2, Q4, Q7, Q8, and W1-W4 are likely to have no discernable effect on montane riparian communities in the Bay Region.					

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Table K-1. Continued

Summary Programmatic Action Outcomes	Applicable Programmatic Actions	Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program	Overall Effect of Summary Programmatic Action Outcomes with Conservation Measures
Water Transfer Program					
T1. Implement a framework of actions, policies, and processes that will facilitate transfers and the further development of a statewide water-transfer market.	None.	Potential for increase in riparian habitat area if water transfers result in augmenting stream flows to alter hydrology of streams sufficiently to allow the natural establishment of riparian vegetation (BE1).	Potential for loss or degradation of existing riparian habitat areas if water is transferred from uses that currently support riparian vegetation (AE1).	<p>To the extent consistent with program objectives, avoid transferring water from sources that support riparian vegetation (M1).</p> <p>Restore or enhance 2-5 acres of habitat for every acre of existing habitat near affected areas at or before implementing actions that could result in the loss or degradation of habitat (M2).</p>	<p>Potential for short-term loss or degradation of existing habitat area if water is transferred from uses currently supporting riparian vegetation and long-term increase in habitat area as a result of implementing conservation measures.</p> <p>Potential for long-term increases in habitat area if water is transferred to uses that would support riparian vegetation.</p>
Watershed Management Program					
M1. Fund and implement watershed restoration, maintenance, conservation, and monitoring activities.	None.	Potential beneficial effects of the program are not analyzed. The type and magnitude of potential beneficial effects would depend on the type of specific program actions that are implemented (N/A).	Potential adverse effects of the program are not analyzed. The type and magnitude of potential adverse effects would depend on the type of specific program actions that are implemented (N/A).		Potential program effects cannot be evaluated.

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Table K-1. Continued

Summary Programmatic Action Outcomes	Applicable Programmatic Actions	Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program	Overall Effect of Summary Programmatic Action Outcomes with Conservation Measures
Sacramento River Region					
Associated Evaluated Species: California wolverine, bald eagle, California red-legged frog, valley elderberry longhorn beetle, valley elderberry longhorn beetle critical habitat, ringtail, little willow flycatcher, greater western mastiff-bat, California yellow warbler, yellow-breasted chat, long-eared owl, Cooper's hawk, osprey, double-crested cormorant (rookery), foothill yellow-legged frog, black-crowned night heron (rookery), great blue heron (rookery), great egret (rookery), snowy egret (rookery) and silky cryptantha.					
Summary Programmatic Action Outcomes E1, E3, E13c, E16c, E18b, E22-E26, E27b, Q1, Q2, Q4, W1-W4, and S2 are likely to have no discernable effect on montane riparian communities in the Sacramento River Region.					
Ecosystem Restoration Program					
E2. Improvement in the supply of sediment to rivers and streams necessary for providing spawning gravels and rehabilitation of related ecological processes (e.g., stream meander) and floodplain habitats (e.g., riparian habitats).	E030201, E030202, E030301, E030302, E030303, E030604, E031602, E040201, E040202, E040203, E040301, E040402, E050201, E050202, E050203, E060401, E070201, E070202, E070203, E080201, E080202, E080203, E080303, E090201, E090401, E090403, E090404, E090407, E090409, E100201, E100202, E105101	Potential for increased riparian habitat area if increased sediment transport increases the number and area of point bars and other depositional features along channels that would provide suitable substrates for the natural establishment of riparian vegetation (BE2).	Potential for loss or degradation of existing habitat area along channels if construction activities result in removal of riparian vegetation (AE2). Construction-related activities associated with implementing actions could result in take of evaluated species (AE3).	To the extent practicable, avoid disturbance to existing habitat areas (M3). M2. To the extent practicable, avoid construction activities during the breeding period of species that could be adversely affected by the actions (M4).	Potential for long-term increase in riparian habitat area and increased connectivity among existing habitat corridors along treated streams and rivers.

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Table K-1. Continued

Summary Programmatic Action Outcomes	Applicable Programmatic Actions	Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program	Overall Effect of Summary Programmatic Action Outcomes with Conservation Measures
				<p>To the extent practicable, avoid direct disturbance to populations and individuals of evaluated plant species (M5).</p> <p>When feasible, establish and protect additional populations of evaluated plant species in suitable nearby habitat areas before construction activities are implemented that could affect existing populations or individuals (M6).</p>	
E6. Restoration and maintenance of riverine aquatic habitats.	E031602, E030301, E030302, E030303, E030604, E040301, E040402, E050201, E050202, E050203, E050301, E050401, E050402, E050403, E050404, E050405, E060401, E070201, E070202, E070203, E080301, E080302, E080303, E080401, E080402, E090401, E090402, E090403, E090404, E090407, E090408, E090408, E091604, E091605, E090201	Increase in riparian habitat area and suitable habitat for associated species along treated streams (BE3).	AE2.	<p>M3.</p> <p>M2.</p>	Potential for long-term increase in riparian habitat area and increased connectivity among existing habitat corridors along treated streams and rivers.

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Summary Programmatic Action Outcomes	Applicable Programmatic Actions	Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program	Overall Effect of Summary Programmatic Action Outcomes with Conservation Measures
				M6.	
Water Quality Program					
Q3. Reduction of mercury loadings in water and sediment.	Q030301, Q030302, Q040301, Q040302, Q050301, Q050302, Q060301, Q060302, Q070301, Q070302, Q080301, Q080302, Q090301, Q090302, Q100301, Q100302	N/E.	Potential for loss or degradation of riparian habitat if reduction of contaminant loadings requires disturbance to stream channels that support riparian vegetation (AE4). AE3	M3. M2. M4. M5. M6.	Potential for long-term increase in habitat area with implementation of conservation measures.
Q7. Reduction of cadmium, copper, and zinc loadings to levels that do not adversely affect Bay-Delta species or beneficial uses of water.	Q030801, Q040801, Q040802, Q050801, Q050802, Q060801, Q060802, Q070801, Q070802, Q080801, Q080802, Q090801, Q090802, Q100801, Q100802	N/E.	AE4. AE3.	M3. M2. M4. M5.	Potential for long-term increase in habitat area with implementation of conservation measures.

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Table K-1. Continued

Summary Programmatic Action Outcomes	Applicable Programmatic Actions	Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program	Overall Effect of Summary Programmatic Action Outcomes with Conservation Measures
Storage Facilities					
S1. Construct and operate enlarged or new surface storage facilities.	None.	N/E	<p>Permanent loss of habitat if storage facilities and associated infrastructure are constructed in drainages that support montane riparian habitat (AE5).</p> <p>Potential for permanent loss or degradation of riparian habitat downstream of storage reservoirs if storage operations adversely affect current channel hydrology supporting existing riparian vegetation (AE6).</p> <p>Fragmentation of riparian corridors and disruption of wildlife movement patterns if storage facilities inundate channels supporting riparian vegetation (AE7).</p> <p>AE3.</p>	<p>M3.</p> <p>M2.</p> <p>To the extent consistent with program objectives, provide sufficient outflow from storage reservoirs sufficient to support the long-term maintenance of downstream riparian vegetation (M7).</p> <p>M3.</p> <p>M4.</p> <p>M5.</p>	<p>Potential for short-term loss of habitat and long-term increase in habitat area with implementation of conservation measures.</p> <p>Potential for permanent fragmentation of riparian corridors and disruption in movement patterns of associated wildlife.</p>

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Table K-1. Continued

Summary Programmatic Action Outcomes	Applicable Programmatic Actions	Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program	Overall Effect of Summary Programmatic Action Outcomes with Conservation Measures
			Recreation-related activities potentially associated with new storage facilities could result in take of evaluated species (AE8).	M6. To the extent practicable, trap and relocate evaluated wildlife species that would be unlikely to escape from the inundation area of new or enlarged reservoirs to suitable nearby habitat areas (M8). Manage recreational uses to avoid or reduce the likelihood for recreation-related impacts on sensitive plant populations and wildlife use areas (M9).	
Water Operations					
01. Implement operating criteria needed to improve water management for beneficial uses.	None.	N/A	N/A		Potential program effects cannot be evaluated.
02. Implement an Environmental Water Account to provide operational flexibility to achieve environmental benefits.	None.	N/A	N/A		Potential program effects cannot be evaluated.
San Joaquin River Region					
Associated Evaluated Species: least bell's vireo, bald eagle, California red-legged frog, valley elderberry longhorn beetle, ringtail, little willow flycatcher, greater western mastiff-bat, California yellow warbler, yellow-breasted chat, long-eared owl, Cooper's hawk, osprey, double-crested cormorant (rookery), foothill yellow-legged frog, saw-toothed lewisia, black-crowned night heron (rookery), great blue heron (rookery), great egret (rookery), and snowy egret (rookery).					
Summary Programmatic Action Outcomes E1, E13d, E18c, E22-E26, E27b, E29, Q1, Q2, Q4-Q6, Q8, W1-W4, and S2 are likely to have no discernable effect on montane riparian communities in the Sacramento River Region.					

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Table K-1. Continued

Summary Programmatic Action Outcomes	Applicable Programmatic Actions	Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program	Overall Effect of Summary Programmatic Action Outcomes with Conservation Measures
Ecosystem Restoration Program					
E2. Improvement in the supply of sediment to rivers and streams necessary for providing spawning gravels and rehabilitation of related ecological processes (e.g., stream meander) and floodplain habitats (e.g., riparian habitats).	E110201, E110202, E110203, E110204, E110205, E110206, E110207, E110208, E110209, E130201, E130202, E130203, E130301, E130302, E130303, E130304, E130305, E130306, E130307, E130402, E135601, E140401, E140403	BE2.	AE2. AE3.	M3. M2. M4. M5. M6.	Potential for long-term increase in riparian habitat area and increased connectivity among existing habitat corridors along treated streams and rivers.
E6. Restoration and maintenance of riverine aquatic habitats.	E110401, E110401, E130301, E130302, E130303, E130304, E130305, E130306, E130307, E130402, E135601, E131601, E131602, E131603, E140401, E140402, E140403	BE3.	AE2.	M3. M2.	Potential for long-term increase in riparian habitat area and increased connectivity among existing habitat corridors along treated streams and rivers.

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Table K-1. Continued

Summary Programmatic Action Outcomes	Applicable Programmatic Actions	Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program	Overall Effect of Summary Programmatic Action Outcomes with Conservation Measures
Water Quality Program					
Q7. Reduction of cadmium, copper, and zinc loadings to levels that do not adversely affect Bay-Delta species or beneficial uses of water.	Q110801, Q110802, Q120801, Q120802, Q130801, Q130802, Q140801, Q140802	N/E.	AE4. AE3.	M3. M2. M4. M5. M6.	Potential for long-term increase in habitat area as a result of implementing conservation measures.
Water Transfer Program					
T1. Implement a framework of actions, policies, and processes that will facilitate transfers and the further development of a statewide water transfer market.	None.	BE1.	AE1.	M1. M2.	Potential for short-term loss or degradation of existing habitat area if water is transferred from uses currently supporting riparian vegetation and long-term increase in habitat area as a result of implementing conservation measures. Potential for long-term increases in habitat area if water is transferred to uses that would support riparian vegetation.

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Table K-1. Continued

Summary Programmatic Action Outcomes	Applicable Programmatic Actions	Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program	Overall Effect of Summary Programmatic Action Outcomes with Conservation Measures
Water Operations					
01. Implement operating criteria needed to improve water management for beneficial uses.	None.	N/A	N/A		Potential program effects cannot be evaluated.
02. Implement an Environmental Water Account to provide operational flexibility to achieve environmental benefits.	None.	N/A	N/A		Potential program effects cannot be evaluated.

Contributors to the development of this table: Pete Rawlings and Gerrit Platenkamp of Jones & Stokes Associates.

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Table K-2. Key to Table K-1 Potential Beneficial Effects, Potential Adverse Effects, and Conservation Measures Codes

Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program
Potential for increase in riparian habitat area if water transfers result in augmenting stream flows to alter hydrology of streams sufficiently to allow the natural establishment of riparian vegetation (BE1).	Potential for loss or degradation of existing riparian habitat areas if water is transferred from uses that currently support riparian vegetation (AE1).	To the extent consistent with program objectives, avoid transferring water from sources that support riparian vegetation (M1).
Potential for increased riparian habitat area if increased sediment transport increases the number and area of point bars and other depositional features along channels that would provide suitable substrates for the natural establishment of riparian vegetation (BE2).	Potential for loss or degradation of existing habitat area along channels if construction activities result in removal of riparian vegetation (AE2).	Restore or enhance 2-5 acres of habitat for every acre of existing habitat near affected areas at or before implementing actions that could result in the loss or degradation of habitat (M2).
Increase in riparian habitat area and suitable habitat for associated species along treated streams (BE3).	Construction-related activities associated with implementing actions could result in take of evaluated species (AE3).	To the extent practicable, avoid disturbance to existing habitat areas (M3).
Potential beneficial effects of the program are not analyzed. The type and magnitude of potential beneficial effects would depend on the type of specific program actions that are implemented (N/A).	Potential for loss or degradation of riparian habitat if reduction of contaminant loadings requires disturbance to stream channels that support riparian vegetation (AE4).	To the extent practicable, avoid construction activities during the breeding period of species that could be adversely affected by the actions (M4).
	Permanent loss of habitat if storage facilities and associated infrastructure are constructed in drainages that support montane riparian habitat (AE5).	To the extent practicable, avoid direct disturbance to populations and individuals of evaluated plant species (M5).
	Potential for permanent loss or degradation of riparian habitat downstream of storage reservoirs if storage operations adversely affect current channel hydrology supporting existing riparian vegetation (AE6).	When feasible, establish and protect additional populations of evaluated plant species in suitable nearby habitat areas before construction activities are implemented that could affect existing populations or individuals (M6).

Table K-2. Continued

Potential Beneficial Effects	Potential Adverse Effects	Conservation Measures Incorporated into the Program
	Fragmentation of riparian corridors and disruption of wildlife movement patterns if storage facilities inundate channels supporting riparian vegetation (AE7).	To the extent consistent with program objectives, provide sufficient outflow from storage reservoirs sufficient to support the long-term maintenance of downstream riparian vegetation (M7).
	Recreation-related activities potentially associated with new storage facilities could result in take of evaluated species (AE8).	To the extent practicable, trap and relocate evaluated wildlife species that would be unlikely to escape from the inundation area of new or enlarged reservoirs to suitable nearby habitat areas (M8).
	Potential adverse effects of the program are not analyzed. The type and magnitude of potential adverse effects would depend on the type of specific program actions that are implemented (N/A).	Manage recreational uses to avoid or reduce the likelihood for recreation-related impacts on sensitive plant populations and wildlife use areas (M9).